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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/866,825      | 05/29/2001  | Thomas I. Insley     | 54605USA6B.007      | 6171             |

7590

11/06/2002

Office of Intellectual Property Counsel  
3M Innovative Properties Company  
PO Box 33427  
St. Paul, MN 55133-3427

EXAMINER

CHAN, SING P

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

1734

8

DATE MAILED: 11/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application N .</b> | <b>Applicant(s)</b> |  |
|                              | 09/866,825             | INSLEY ET AL.       |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Sing P Chan            | 1734                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 32-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 32 is/are allowed.
- 6) ☒ Claim(s) 33-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All   b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other:  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 33-34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 33, it is unclear how a filtration media array is created by layering multiple filtration media arrays. For the purpose of examination, "to create a filter having multiple flow channel layers" will be assumed.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 35 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kalt (U.S. 4,249,919) in view of Landi et al (U. S. 5,039,567) and Schjeldahl (U.S. 4,319,952).

Kalt as applied in the above 102(b) rejection, also teaches layering the channel layer assembly to create the filtration media array with multiple flow channel layers. (Col 3, lines 30-51 and Col 3, line 60-66) Kalt does not disclose slicing filtration media

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array with a hot wire to fuse the adjacent layers together. However, it is well known and conventional to use a cutting means to easily form core strips such as used in Kalt from laminated blocks as shown for example by Landi et al (Col 4, lines 40-51) Landi et al indicates any means to cut are usable but does not specifically disclose the use of a hot wire. (Col 4, lines 49-51) Schjeldahl teaches using a hot wire provides a simultaneous formation of a fused weld when cutting a thermoplastic material such as the Mylar in Kalt. (Col 4, line 43 to Col 5, line 4)

It would have been obvious to one skilled in the art at the time the invention was made to easily form the cores in Kalt's from a laminated block as suggested by Landi et al using a hot wire to fuse the Mylar during cutting as suggested by Schjeldahl.

***Allowable Subject Matter***

5. Claim 32 is allowed.
6. Claims 33-34 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for indicating allowance and allowance: The claims recite a method of forming a contoured layer channel flow filtration media. The method includes the steps of forming a contoured polymer film, joining the contoured polymer film to another flat polymer film to form a flow channel layer assembly, changing the flow channel layer assembly electrostaticly to form the charged filtration media, and layering the charged filtration media to form the filter with multiple flow channels. Kalt discloses a method of forming an electrostatic filter. The

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method includes the steps of forming the first polymeric film into the desired shape using heat and pressure, bonding the first polymeric film to the second polymeric film to form the flow channel layer assembly, and charging the filter with an electrical circuit to filter the particle. (Col 3, line 30 to Col 4, line 50, Col 5, lines 8-15, and figures 1-5) However, Kalt does not disclose charging the flow channel layer assembly prior to layering the flow channel layer assembly to form the filter. A search of the prior art of record did not disclose any reference or references in combination, which recite the feature.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Response to Arguments***

7. Applicant's arguments filed August 28, 2002 have been fully considered but they are not persuasive.

In response to applicant's argument of the hot wire is unusable to cut metal-type film, the film disclosed by Kalt is a metallized Mylar film with a coating of aluminum. The aluminum coating is considered to be non-self-supporting and require the support of the Mylar and therefore the only requirement to cut the film is to heat the sufficiently thin Mylar film to the melting point of the film. A hot wire is considered to be capable of

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reaching such a temperature. For example, Kay et al (U.S. 5,319,475) discloses a method of cutting and sealing films and a security seal. The security seal includes a metal layer and a hot wire is used to cut and seal the edge of the bag and the security seal. (Col 11, lines 48-61)

In response to applicant's argument of the need to expand the laminate describes by Landi. The examiner relied on Landi to disclose a method of cutting a honeycomb structure using any other suitable means. Landi show the cutting of the structure with the cutting means while the structure is expanded. (Figure 6) The method of forming the structure is disclosed by Kalt and does not require the structure to be expanded.

### ***Conclusion***

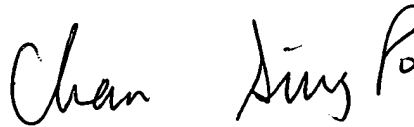
8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Duffy et al (U.S. 5,324,465) discloses a method of cutting a honeycomb structure using any means such as a wire cutter, i.e. hot wire. (Col 15, line 58 to Col 16, line 5) Duffy et al further support the examiner argument of cutting the corrugated or honeycomb structure with a hot wire without the need to expand the structure is well known and conventional.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sing P Chan whose telephone number is 703-305-3175. The examiner can normally be reached on Monday-Friday 7:30AM-12:00PM and 1:00PM-4:30PM.


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 703-308-3853. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

  
Sing P Chan  
Examiner  
Art Unit 1734

spc  
October 25, 2002

  
RICHARD CRISPINO  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700